

Table of Contents

EXECUTIVE SUMMARY of DR. JOSHUA LEDERBERG'S Participation in THE CHIEF OF NAVAL OPERATIONS EXECUTIVE PANEL

October 1982: Navy Medical Research and Development Study Group	1
January 1983: Chemical Warfare Task Force	1
August 1984: Terrorism Task Force	2
December 1985: Personal Excellence and National Security Task Force	2
October 1987: Maritime Operations in an Era of Constrained Resources Task Force	3
June 1988: Navy Training Organization and Management Task Force	3
August 1991: Shallow Water Anti-Submarine Warfare (ASW) Task Force	4
August 1992: Technology Surprise Task Force	5
March 1993: Environment Task Force	5
September 1993: National Defense Task Force	6
June 1995: Naval Warfare Innovation Task Force	7
April 1998: Littoral Surveillance Task Force	8
May 1999: Homeland Defense Task Force	9
June 1999: Space and Information Warfare Task Force	10-11

Table of Contents

EXECUTIVE SUMMARY of DR. JOSHUA LEDERBERG'S Participation in THE CHIEF OF NAVAL OPERATIONS EXECUTIVE PANEL

August 1999: Pacific Strategy Task Force	12
March 2000: Technology Hedging Strategies Task Force	13
June 2000: Energy Task Force	14
March 2001 (In Progress): High Impact Environmental Issues Task Force	15

**EXECUTIVE SUMMARY of
DR. JOSHUA LEDERBERG'S
Participation in
THE CHIEF OF NAVAL OPERATIONS EXECUTIVE PANEL**

October 1982: Navy Medical Research and Development

Study Group

Purpose: Specific purpose not available. Archived papers include following briefings: "Overview of Navy Medicine," "Exploratory Development Strategy: Medical and Life Support," "Planning and Programming Procedures employed by Navy Medical Research and Development Command (NMRDC)" and an executive overview of NMRDC programs that was presented to the Executive Panel. Additionally the files contain a 1977 report to the House Appropriations Committee on the "Overseas Medical Research Programs of the Department of Defense."

Recommendations: Specific recommendations not annotated in files.

January 1983: Chemical Warfare Task Force

Purpose: To examine the impact of chemical warfare on the Navy. Assess the Navy's potential role in support of national policy. Assess the Navy's requirements for operating in a maritime chemical warfare environment.

Recommendations:

- Develop and procure binary weapons.
- Affirm response to threat.
- Establish CITADEL capability on appropriate ships.
- Improve Chemical Biological Radiation (CBR) training.
- Procure MKIII CBR suit.

August 1984: Terrorism Task Force

Purpose: To examine key issues related to terrorism and to Navy policy on terrorism and counter/anti-terrorism. Identify Navy vulnerabilities and potential improvements to decrease Navy risk to terrorism.

Recommendations:

- Keep it in perspective.
- Establish a dedicated cell at National Security Council (NSC).
- Establish program to protect national infrastructures.
- Employ red teams to improve USN anti-terrorism readiness.
- Develop non-manned vehicles for selected counter-terrorism scenarios.
- Adopt more detached posture in Persian Gulf.

December 1985: Personal Excellence and National Security Task Force

Purpose: To examine the Navy's health and educational requirements, priorities, and program. Review both the quality requirement of the enlisted force and the present level of activity in the Navy's health promotion and disease prevention programs and how they can be expanded and improved.

Recommendations:

- Develop internal, Navy-wide "Agenda for Personal Excellence" to institutionalize the pursuit of personal excellence and service.
- Enhance the education, health and moral strength of Americans through externally-orientated partnership programs with local and state agencies.
- Contribute to national awareness of the need for personal excellence and its relationship to national security.

October 1987: Maritime Operations in an Era of Constrained Resources Task Force

Purpose: To examine the Navy's prospective fiscal environment and alternative ways to cope with a growing Navy and a shrinking budget. Examine approaches to maritime operations and readiness by identifying factors that drive current levels and types of USN operations in peacetime and contingencies. Assess whether the Navy can meet current commitments more economically and examine how to strengthen the use of maritime strategy in resource allocation decisions.

Recommendations:

- Blue/Gold Concept for surface ships.
- Reduce number of forward deployed ships.
- Reduction in amphibious lift goal.
- Substitute carrier air wing with marine air wing.
- Reduction in number of peacetime deploying carriers.

June 1988: Navy Training Organization and Management Task Force

Purpose: To assess how best to organize and manage Navy training to accommodate future requirements. Identify alternatives to best established clear and essential training requirements for the future, organize those requirements from an integrated perspective, and how to apply promising training technology in the most effective manner.

Recommendations:

- Develop a conceptual model for Navy enlisted training.
- Apply this model, or "paradigm," to focus and streamline Navy training.
- Accomplish efficiencies in the "Individuals Account". Cut out unnecessary courses, create course "packages" to reduce student travel and waiting time.
- Establish a direct and effective chain of command for Navy training.
- Set the highest possible standards inside the classroom and throughout Navy schoolhouses. Emphasize the importance of training Navy-wide.

- Place emphasis on excellence, quality and elitism, most particularly inside the classroom. Provide the tools, in terms of top quality instructors, officers, modern facilities, and support of modern training technologies.
- Make explicit decisions on the use of information management systems for: an airline-style course quota management network, and individual personnel training record, and workable feedback into the detailing process.
- Pursue joint initiatives to identify the best applications of technology to military training.

August 1991: Shallow Water Anti-Submarine Warfare (ASW)

Task Force

Purpose: To provide an overview of the challenges that the Navy will face in shallow water ASW, examining existing programs, identify shortfalls, and make specific recommendations to improve the Navy's capabilities. The growing possibility of regional conflict, combined the proliferation of diesel submarine technology and air independent submarine propulsion systems, makes antisubmarine warfare in shallow and coastal waters increasingly difficult and important mission for naval forces.

Recommendations:

- Establish vigorous operational testing program to determine current capabilities. Weapons are especially critical.
- Develop shallow water investment roadmap.
- Procure environmentally realistic training simulators.
- Establish a 3-5 year management effort to implement testing, training, and technology programs.

August 1992: Technology Surprise Task Force

Purpose: Examine issues relating to ongoing research and development efforts, particularly in the Soviet Union that could result in technology surprises to the U.S. Navy. Requested to concentrate on plausible suspicions and avoid problems being worked by others. This Task Force transcended the period when the Soviet Union disintegrated and accordingly broadened the group's focus.

Recommendations:

- Establish a multi-disciplinary technology surprise prevention group.
- Establish a mechanism for maintaining and gaining technology advantage.
- Actively participate in Department of Defense (DoD) sponsored modeling and simulation efforts to ensure Navy needs are being met.
- Alert National Authorities to infrastructure vulnerabilities.
- Reconvene this task force in 12-18 months to examine new developments.

March 1993: Environment Task Force

Purpose: To evaluate Navy's overall environmental posture. Growing environmental awareness and subsequent laws and regulations will have increasing implications on Navy resources and operations. Look at the effect of increasingly stringent environmental regulations on operations. Of particular concern was the issue of Commanding Officer liability.

Recommendations:

- Incorporate environment into fleet visits, meetings with Governors. etc.
- Take a proactive role in legislative/regulatory process and compliance.
- Develop health and environment risk-based, anticipatory management.
- Increase training on requirements and procedures.
- Consider a "bold" move.

September 1993: National Defense Task Force

Purpose: To identify key trends of the early 21st century and how they will affect the international order. Ascertain the United States' objectives and what role military forces will play in peace, crises and conflict. Define the means by which military forces, especially naval, can influence events and support the national interest in this future world – why, when, and where it is important.

Recommendations:

- Hedging for the unknown.
 - Maintain forward presence; emphasis in the Pacific and Indian Oceans.
 - Innovative methods to have broad capabilities.
- Economic and political impact of decisions.
 - Navy needs to be in touch with National Economic Council (NEC) and Commerce Department in addition to National Security Council (NSC) and Office of the Secretary of Defense (OSD).
- Jointness.
 - Continued emphasis.
- Managing global involvements from continental United States (CONUS).
 - Meeting commitments without carriers.
 - Consider use of small contingencies with modest presence.
- Need to continue development of an engagement doctrine.
- Re-evaluate nuclear doctrine.
 - Global threat diminishing, regional threat growing.
 - Consider strategic restructuring.
 - Re-evaluate tactical nuclear reconstitution plan.
 - Continue trend to strategic nuclear draw down.
- Technological edge.
 - Focus our efforts to achieve this advantage.

June 1995: Naval Warfare Innovation Task Force

Purpose: To provide a vision of possible new directions in naval warfare for the 21st Century that reflects both advances in technology as well as new national security challenges. Additionally, assess Navy's ability to affect warfare innovations through plans to develop and incorporate technology in new systems and modifications of existing system. Specifically address organizational barriers to innovation.

Recommendation:

- Establish a formal process to rapidly conceive, evaluate, and exploit major opportunities for innovation in naval warfare.
- Create a strong and independent concept generation organization such as:
 - President of the Naval War College as leader of concept generation.
 - Superintendent of Naval Postgraduate School to provide support to the concept formulation process.
 - Form a strong supporting team.
 - Naval Doctrine Command to coordinate with the President of the Naval War College in this effort.
- Provide on-going support for concept generation.
 - Request Chief of Naval Research (CNR) provide projections of technology.
 - Obtain strategic projections 10 to 20 years ahead from multiple sources.
- Establish concept analysis capability.
- Collaborate with the Assistant Secretary of the Navy for Research, Development and Acquisition (ASN (RD&A)) on identification, funding, and organization of experimental demonstrations/operational testing of naval warfare innovations at the system level.
- Collaborate with OSD, Joint Chiefs of Staff (JCS), and USMC leadership as well as Congress in initiating the acquisition and development of successful naval warfare innovations.

April 1998: Littoral Surveillance Task Force

Purpose: To examine requirements for Surveillance/Reconnaissance/Targeting (S/R/T) in Naval operations. Assess adequacy of current and planned systems to meet requirements, including concepts of operations, architectures and technologies. Assess Navy organizations as related to the S/R/T issue concerning doctrine and authority, planning and execution as well as skills and training.

Recommendation:

- Focus on integration of Command, Control, Communications, Computers, Surveillance and Reconnaissance (C4ISR) with targeting:
 - In technology.
 - In organization of the acquisition process.
 - In operations, through training and doctrine.
- Embrace networking as a solution enabler.
- Create Navy-organic sensor capabilities as a hedge against availability/performance of national/joint systems.
- Establish Commander Space Warfare Systems Command (COMSPAWARSYSCOM) as “systems engineer” for C4ISRT.
 - Technical and budgetary controls required.
- Establish a “land attack study” to frame requirements, focus technical issues for littoral operations.
 - Comprised of naval officers, headed by two-star.
 - Mission: Assess competing approaches, new initiatives and provide master plan to guide doctrine, major development programs.

May 1999: Homeland Defense Task Force

Purpose: To examine the Navy's role in homeland defense. Define and scope current threats to the United States' homeland. Identify Navy's unique capabilities to counter these threats. Determine if the Navy is optimally trained, organized, and equipped to respond quickly and effectively. Examine the impact of an expanded Navy homeland defense role on other core missions of forward presence and power projection, and outline potential costs, trade-offs and efficiencies. Examine the adequacy of current Unified/Navy Component Command structure and its ability to support homeland defense missions.

Recommendations:

- Avoid characterizing Navy theater missile systems as national systems, but seek to enhance their capability as technology and treaty renegotiations permit.
- Fund a concept definition study on sea-based National Missile Defense.
- Focus homeland defense efforts on protecting Navy installations in the United States.
- Direct claimants to develop installation contingency plans to include memoranda of agreement with local communities and other agencies.
- Require each Navy installation to have a trained first response team that could isolate an effected area, triage casualties and secure the base.
- Ensure Commanders are aware of the unique problems of covert biological attacks.

June 1999: Space and Information Warfare Task Force

Purpose: Initially, to examine the process by which Navy creates requirements and leverages investment in space systems acquisition. Review how Navy trains and prepares its personnel to exploit space assets and consider policy issues, organizational structure, resource allocation, billet structure, career planning, and personnel rotation in order to promote, develop, and maintain organic expertise in space. Subsequently, to provide a coherent view of Navy Information Warfare (IW) policies, examine the implications to the Navy of unifying the space and IW roles. Examine ways in which the Navy can optimize and leverage United States Space Command's (USCINCSpace) expanded role in IW.

Recommendations:

- Candidate Chief of Naval Operations (CNO) Vision Statement.
 - Operations – Recognize the essential nature of information in warfare.
 - People – Instill in all our Sailors a fundamental knowledge of how to employ information assets in all warfare areas.
 - Organization – Develop organizational mechanisms to ensure seamless connectivity between the Intelligence, Information and Interoperability (I³) and the rest of the combat system.
- Board: Attributes.
 - Operations.
 - Broader in scope than current space and information warfare / operations forums.
 - Focused on the real issue - warfighting impact.
 - Fleet equities are key.
 - Linkage to Navy after Next is key.
 - Implementation of sensor-to-shooter concept.
 - Requirements.
 - Small enough and senior enough to make decisions.
 - Cuts across current diverse constituencies.
 - Direct link to Fleet.
 - Direct input from Navy After Next.

- People.
 - Develop specifications for what all Sailors need to know.
 - Specialist and generalist equities are represented.
 - Provides a forum for discussion.
- Constructs – Consolidation of all technical and operational activities, including Navy Space Command under a “functional type commander” (three star admiral), with linkages to National Reconnaissance Office (NRO). This command would serve as the type commander for USCINCSpace.
- Transition structure – Gradual consolidation of various commands under Director, Space, Information Warfare, Command and Control (OPNAV N6) auspices.
- Logical end state – N6 becomes the “Commander, Naval Information Operations Command” with an “N6” representing his interests on the OPNAV staff. This new commander becomes the network manager and technical authority for the Navy’s tactical and administrative networks, and the community manager for space and information specialists and sub-specialists.

August 1999: Pacific Strategy Task Force

Purpose: To examine potential security environments for the Asia-Pacific Region and identify goals for a flexible 21st century regional strategy. Examine ways to hedge strategy and force dispositions to respond to a variety of missions and shift in the international environment.

Recommendations:

- The United States should develop an integrated POL/MIL/ECON strategy for the region – United States Pacific Command (USCINCPAC) is uniquely positioned to take the lead for the Services.
- The United States should actively seek to sustain or increase access around the western rim of the Pacific.
- Navy should ensure continued robust Seventh Fleet operations in the region -- frequent out-of-area contingency operations raise questions about United States regional presence.
- Navy should enhance defense capabilities of the Association of South East Asian Nations (ASEAN) nations through joint exercises and cooperative training programs. The United States should continue to strengthen Navy-to-Navy ties with Japan. Specifically:
 - Do studies of alternatives *now* for use in the event of crises over sensitive issues like Naval Air station (NAS) Atsugi and USMC bases in Okinawa.
 - Encourage United States policymakers to advocate Japanese Maritime Self Defense Force (JMSDF) AEGIS upgrades and sea-based Theater Missile Defense (TMD).
 - Lay the groundwork for eventual nuclear powered carrier (CVN) relief of KIITY HAWK 3 or 4 years ahead.
 - CNO should stress common strategic interests with key Japanese senior civilian and military leaders. Navy should assess the feasibility of homeporting a ship(s) in Korea.

March 2000: Technology Hedging Strategies Task Force

Purpose: To examine the nature and scope of future technological breakthroughs, the potential vulnerabilities those breakthroughs might create, the relative strengths of the United States and foreign technology, and the potential for technological surprise. Additionally, examine the effectiveness of U.S. export controls and other approaches to monitor, control, or prevent the proliferation of high tech information, software, and hardware with military applications.

Recommendations:

- Strengthen existing Office of Navy Intelligence Science and Technology Intelligence assets.
- Balance Science and Technology “discovery” effort against “Future Naval Capabilities.”
- Task Navy Warfare Development Command and the Office of Naval Intelligence to “Red Team” Future Naval Capabilities.
- Employ Special Access Programs as part of Hedging Strategy.
- Develop clear Navy policy on export controls and technology transfer, and communicate it aggressively.

June 2000: Energy Task Force

Purpose: To review Navy energy expenditures and assess the impact of sudden large increases in fuel costs on Navy operations and budgets. Assess the future of the world's energy supply, economic accessibility, and demand through 2030 and examine the likelihood of the reemergence of a strong oil cartel. Explore possible alternatives to oil.

Recommendations:

Navy Expenditures:

- Do nothing re fuel costs - Navy cannot affect this.
- Continue an organized program to reduce Navy energy expenditures through conservation, efficiency, and adaptation to use of alternative fuels if/as they become available over the longer term.
- Assess Inter-cooled Regeneration Gas Turbine Engine (ICR) potential for new ship classes.

Energy Outlook/Oil Cartels:

- Remain alert to oil price developments on a continuing (though not intense) basis - oil prices are manifestations of other things going on.
 - Determine which excursions from "business as usual" could have major implications for Navy.
 - Enduring disruptions/chaos in the Gulf, especially Saudi Arabia.
 - Demand surprises (on both high and low sides).
 - Unforeseen changes in nature and scale of Chinese, Indian energy demands, energy flows.
 - Task intelligence to look at major country (e.g., India, China, Saudi Arabia, Iran) energy strategies.
 - Address Navy role in ensuring uninterrupted sea borne world energy flows in Quadrennial Defense Review (QDR) preparations.

Alternatives to Oil:

- Department of Energy's (DOE) Energy R&D budget is much larger than Navy Energy R&D budget -- don't compete with DoE.
 - Leverage DoE investment.
 - Focus Navy Dollars on Navy-unique problems.
- Study potential impact of Kyoto Treaty (partial) implementation.
- Maintain platform and power plant design flexibility wherever possible as a hedge.

March 2001 (In Progress: High Impact Environmental Issues
Task Force

Purpose: The Task Force was formed in the fall of 2000 to assess the nature and scope of future domestic and international environmental concerns that may impact U.S. Navy operations or effectiveness. Also they were asked to identify critical training requirements and investigate alternatives to current training practices and procedures that would mitigate environmental concerns. Finally they are to survey the potential impact of pending environmental laws, treaties, and issues on Navy operations. This Task Force is still ongoing and has yet to form recommendations.